both smaller than those assigned in the B.A.C., the latter considerably so, the proper motion in N.P.D. there given amounting to + 0″·25.

Blackheath:
1894 *December* 7.

A Comparison of some Places of Stars observed at the Sydney Observatory with the Places of the same Stars as given in the Cape Catalogue, 1880. By H. P. Hollis.

The stars used in this comparison are contained in the latest publication from the Sydney Observatory, which was published in 1893, and gives the results of meridian observations made in the years 1879, 1880, 1881, in the form of annual catalogues for these years.

From these annual catalogues a catalogue has been formed for epoch 1880 of about 300 stars, all of which have been observed at least three times in either element, and only places which depend on at least three observations have been used in this comparison.

The places thus found have been compared with the places given in Mr. Stone's Cape Catalogue for epoch 1880, and Table I. gives the result of this comparison, the stars being arranged in order of R.A. and divided into hourly groups. The figures in columns 3 and 5 give the simple means of such groups.

Table I.

	R.A.		N.P.D.			R.A.		N.P.D.	
Limits of R.A.	No. of Stars.	Difference Sydney−Cape × sin N.P.D.	No. of Stars.	Difference Sydney−Cape.	Limits of R.A.	No. of Stars.	Difference Sydney−Cape × sin N.P.D.	No. of Stars.	Difference Sydney−Cape.
h h		s		″	h h		s		″
0–1	7	+0·080	5	+0·33	12–13	14	+0·026	11	−0·13
1–2	7	+0·058	8	+0·33	13–14	23	+0·055	22	−0·76
2–3	10	+0·140	9	+0·38	14–15	21	+0·116	20	−0·36
3–4	20	+0·224	20	−0·04	15–16	11	−0·054	10	−0·04
4–5	13	+0·202	13	+0·37	16–17	18	+0·055	18	−0·65
5–6	16	+0·098	16	+0·89	17–18	8	−0·011	8	+0·05
6–7	11	+0·082	10	+0·85	18–19	3	−0·050	3	+1·26
7–8	15	+0·093	14	−0·11	19–20	1	−0·030	1	+2·68
8–9	15	+0·041	15	+0·73	20–21	10	+0·006	10	−0·44
9–10	17	+0·015	16	+0·47	21–22	9	−0·001		+0·36
10–11	20	+0·013	20	+0·52	22–23	9	+0·044	9	+0·03
11–12	18	−0·015	16	−0·17	23–0	5	+0·053	5	+0·42

This table calls for little comment. In many cases the number of stars in a group is too few to eliminate accidental errors. To form the next table the stars were arranged in order of N.P.D., divided into groups of about ten, and the weighted means of these groups taken, each difference being weighted according to the usual formula :

$$\frac{4mn}{m+n+\frac{1}{5}mn}.$$

TABLE II.

Differences arranged in order of N.P.D. and divided into groups of approximately ten stars. The weighted means of such groups are given.

R.A.				N.P.D.			
Approx. N.P.D. of group.	No. of Stars.	Wt.	Diff. of R.A. (S.−O.) ×sin N.P.D.	Aprox. N.P.D. of group.	No. of Stars.	Wt.	Diff. of N.P.D. Sydney−Cape.
° ′			s	° ′			″
63 37	11	103	+0·049	63 42	9	41	+0·35
69 36	10	98	+0·025	69 36	10	43	+0·70
76 8	10	92	−0·004	76 32	9	42	+1·00
80 15	10	93	−0·003	80 15	10	51	+0·48
82 37	11	104	−0·019	82 44	10	60	+1·47
87 21	10	85	+0·008	87 21	10	49	+0·77
91 30	11	102	+0·013	91 34	10	58	+0·61
97 42	10	94	+0·018	97 42	10	65	+0·81
102 28	10	97	+0·038	102 28	10	58	+0·73
107 47	10	76	+0·042	107 44	9	43	+0·44
113 56	10	80	+0·053	114 1	9	55	+0·04
118 32	10	56	−0·008	118 32	10	52	+0·63
119 50	10	51	+0·056	119 50	10	51	+0·13
120 14	9	49	+0·070	120 14	9	45	−0·31
120 52	10	52	+0·142	120 52	10	51	−0·07
121 49	10	50	+0·070	121 49	10	51	+0·03
123 4	10	55	+0·110	123 4	10	50	−0·38
124 12	10	53	+0·049	124 12	10	54	−0·24
124 50	10	58	+0·143	124 50	10	50	+0·45
125 47	10	51	+0·225	125 47	10	53	+0·20
126 28	10	44	+0·187	126 28	10	48	+0·67
131 21	10	46	+0·126	131 21	10	48	−0·00
135 13	8	40	+0·085	135 3	10	55	−0·51
137 28	10	51	+0·038	137 23	9	42	−0·41
141 29	10	49	+0·124	141 29	10	51	−1·18
146 7	10	49	+0·086	146 7	10	53	−1·38
150 25	10	49	+0·036	150 25	10	56	−1·09
153 19	10	47	+0·296	153 16	9	45	−0·34
159 20	11	81	+0·054	159 49	10	73	−0·71

It will be seen that the differences of N.P.D. are comparatively large, but that there is a decided sequence, which is more obvious from Table III., where the means of the preceding results are taken in groups of five.

TABLE III.

Means of Differences arranged in order of N.P.D. and taken in groups of 50 Stars.

Approx. Mean N.P.D. of group.	Difference of R.A. Sydney−Cape ×sin N.P.D.	Difference of N.P.D. Sydney−Cape.	Correction of the form +1″·576×sin *zd* Sydney.
° ′	s	″	″
74 27	+0·010	+0·83	+1·20
97 22	+0·024	+0·69	+0·73
118 41	+0·061	+0·09	+0·14
123 56	+0·121	+0·01	−0·00
134 24	+0·109	−0·30	−0·29
152 24	+0·074	−0·89	−0·74
General Mean	+0·055	+0·09	

The latitudes of Sydney and of the Cape happen to be nearly identical, each being approximately 33° 54′. The N.P.D. of the fourth group in Table III. is therefore nearly that of the zenith. From the mean of this group in N.P.D. it may be inferred that the difference of the adopted latitudes of Sydney and of the Cape is not far from the truth. The means of the other groups seem to point to the want of an instrumental correction, depending on the zenith distance, to the observations of one or the other catalogues. No correction of this kind was applied to the Sydney observations, but determinations of horizontal flexure by the collimators gave a mean value for the flexure constant of 1″·576. The values of a correction of the form $+ k \sin z.d$ with the above value of k, applicable to the Sydney observations of zenith distance, and therefore applicable with changed sign to these differences, are given in the last column of Table III.

Remarks on Three Volumes of Sun-spot drawings presented to the Society. By Rev. F. Howlett, M.A.

I have the honour of requesting the Society to accept what will, probably, be the *final instalment* of my solar drawings. Many thousands of spots great and small are therein depicted with the greatest care and, let me say, conscientiousness, of which I was capable.

The series, more or less continuous, extends over a period of about five-and-thirty years, and I may truly say the work has been a labour of love and of the deepest interest. I imagine (if I may say so without arrogance) that no such series of hand-